

PIPELINING OF MULTIPLEXER LOOPS IN A DIGITAL CIRCUIT

ABSTRACT OF THE DISCLOSURE

An n -level look-ahead network converts input values to intermediate values that are provided to a plurality of multiplexers arranged to form a pipelined multiplexer loop. The first stage of the multiplexer loop consists of a single multiplexer. The second stage consists of at least two multiplexers. Communication links couple the output ports of the second stage multiplexers to the input ports of the first stage multiplexer. A first feedback loop electrically couples the output port of the first stage multiplexer to the control port of the first stage multiplexer. This first feedback loop has a first delay device having a first delay time. A second feedback loop couples the output port of the first stage multiplexer to the control ports of the second stage multiplexers. This second feedback loop includes the first delay device and a second delay device having a second delay time.

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